AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended (33 U.S.C. §§1251 et seq.) (the "CWA") and the Massachusetts Clean Waters Act as amended (M.G.L. Chap. 21, §§26-53),

City of Marlborough
Department of Public Works

is authorized to discharge from the facility located at

Marlborough Easterly Wastewater Treatment Facility ("Facility")
860 Boston Post Road
Marlborough, Massachusetts 01752

to an unnamed tributary to Hop Brook in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This Permit shall become effective sixty days from the date of signature.

This Permit and the authorization to discharge expire at midnight five years from the issuance date of the Permit.

This Permit supersedes the Permit issued September 8, 1988.

This Permit consists of 14 pages in Part I, including effluent limitations, monitoring requirements; Attachment A, Freshwater Chronic Toxicity Test Procedure and Protocol; Attachment B, Sludge Guidance; and 35 pages in Part II, including General Conditions and Definitions.

Signed this 16th day of September, 2004

/s/ SIGNATURE ON FILE

Linda M. Murphy, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Boston, MA 02114

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA 02108

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the Permittee is authorized to discharge from outfall serial number 001 (Facility effluent). Such discharges shall be limited and monitored by the Permittee as specified below for the period **April 1 - November 30** unless otherwise noted:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement[3]	
	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	5.5	----	----	----	----	Continuous[2]	Recorder
$CBOD_5$	321 lbs/day	459 lbs/day	7 mg/l	10 mg/l	15 mg/l	3/Week	24-Hour Composite
TSS	688 lbs/day	917 lbs/day	15 mg/l	20 mg/l	30 mg/l	3/Week	24-Hour Composite
pH, s.u.[1]	----	----	(See Condition I.A.3.a)			1/Day	Grab
Dissolved Oxygen	----	----	Not less than 80% saturation			1/Day	Grab
Fecal Coliform, cfu[4]	----	----	200/100 ml	400/100 ml	400/100 ml	3/Week	Grab
Total Residual Chlorine[5]	----	----	.011 mg/l	----	.019 mg/l	1/Day	Grab
Ammonia- Nitrogen	----	----	0.5 mg/l	0.75 mg/l	1.0 mg/l	3/Week	24-Hour Composite

Effluent Characteristic	Discharge Limitation					Monitoring Requirement[3]	
	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Maximum[1] Daily	Measurement Frequency	Sample Type
Total Phosphorus	----	----	0.1 mg/l[6]	----	Report	3/Week	24-Hour Composite
Total Aluminum	----	----	----	----	Report	1/Month	24-Hour Composite
LC_{50} [7,8]	----	----	----	----	100%[9]	1/Quarter (4/year)	24-Hour Composite
C-NOEC [8,10]	----	----	----	----	99%	1/Quarter (4/year)	24-Hour Composite

The discharge shall not cause a violation of the water quality standards of the receiving waters.

2. During the period beginning the effective date and lasting through expiration, the Permittee is authorized to discharge from outfall serial number 001 (Facility effluent). Such discharges shall be limited and monitored by the Permittee as specified below for the period **December 1 - March 31** unless otherwise noted:

Effluent Characteristic	Discharge Limitation					Monitoring Requirement[3]	
	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow (MGD)	5.5	----	----	----	----	Continuous[2]	Recorder
$CBOD_5$	917 lbs/day	1147 lbs/day	20 mg/l	25 mg/l	30 mg/l	3/Week	24-Hour Composite
TSS	917 lbs/day	1147 lbs/day	20 mg/l	25 mg/l	30 mg/l	3/Week	24-Hour Composite
pH, s.u.[1]	----	----	(See Condition I.A.3.a)			1/Day	Grab
Dissolved Oxygen	----	----	Not less than 80% saturation			1/Day	Grab
Fecal Coliform, cfu[4]	----	----	200/100 ml	400/100 ml	400/100 ml	3/Week	Grab
Total Residual Chlorine[5]	----	----	.011 mg/l	----	.019 mg/l	1/Day	Grab
Ammonia- Nitrogen	----	----	4.4 mg/l	4.4 mg/l	Report	1/Week	24-Hour Composite
Total Phosphorus	----	----	0.75 mg/l[6]	----	Report	3/Week	24-Hour Composite
Ortho Phosphorus	----	----	Report	----	Report	3/week	24-Hour Composite

Effluent Characteristic	Discharge Limitation					Monitoring Requirement[3]	
	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Maximum Daily[1]	Measurement Frequency	Sample Type
Total Aluminum	----	----	----	----	Report	1/Month	24-Hour Composite
LC_{50} [7,8]	----	----	----	----	100%[9]	1/Quarter (4/year)	24-Hour Composite
C-NOEC [8,10]	----	----	----	----	99%	1/Quarter (4/year)	24-Hour Composite

The discharge shall not cause a violation of the water quality standards of the receiving waters.

Footnotes for Conditions I.A.1 and I.A.2:

1. This is a State certification requirement.

2. Maximum daily rates and average daily flow for the month shall be reported.

3. Both influent and effluent values shall be reported for BOD and TSS. All required effluent samples shall be collected at a point after disinfection and prior to discharge to the receiving water. Effluent samples shall be conducted on the same day(s) each week whenever feasible. Any change in sampling location must be reviewed and approved in writing by the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP"). All samples shall be tested using the analytical methods found in 40 CFR Part 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR Part 136. All samples shall be 24-hour composites unless specified as a grab sample. A 24-hour composite sample will consist of at least 24 grab samples taken over a consecutive 24 hour period.

4. This is a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with the Total Residual Chlorine ("TRC") sampling.

5. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the discharge monitoring report.

   Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

6. The 0.1 mg/l limit is a 60 day rolling average limit and applies for the period of April through October. The 60 day average value for each day in a given month, beginning on the 60th day after April 1, must be calculated and the highest 60 day average value for that month must be reported on the monthly discharge monitoring report (DMR). In addition, the maximum daily value must be reported for each month. For the months of April and May, the 30 day average value shall be reported as a report only requirement.

   The permittee shall comply with the 0.1 mg/l limit in accordance with the schedule contained in section E below. Upon the effective date of the permit, and until the date specified in Section E

below for compliance with the final limit of 0.1 mg/l, an interim seasonal average total phosphorus limit of 0.5 mg/l shall be met. Consistent with Section B.1 of Part II of the Permit, the Permittee shall properly operate and maintain the phosphorus removal facilities at the Facility to obtain the lowest effluent concentration possible.

The 0.75 mg/l limit is a monthly average limit and applies for the period of November through March. The monthly average and maximum daily values shall be reported on each months DMR report.

These permit limits may be modified, subject to public notice and comment, based upon revisions to the water quality standards, compliance with the requirements of a Total Maximum Daily Load, or upon a demonstration that an alternative permit limit will achieve water quality standards and the goals of the Clean Water Act.

7. "LC50" is defined as the concentration of wastewater that causes mortality to 50% of the test organisms.

8. The Permittee shall conduct chronic and modified acute toxicity tests four times per year. The chronic test may be used to calculate the acute LC_{50} at the 48-hour exposure interval. The Permittee shall test Ceriodaphnia dubia and Pimephales promelas. Toxicity test samples shall be collected during the third week of the months of March, June, September, and December. The test results shall be submitted by the last day of the month following the completion of the test, i.e., the results are due April 30, July 31, October 31 and January 31, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this Permit.

Test Dates	**Submit Results By:**	**Test Species**	**Acute Limit LC_{50}**	**Chronic Limit C-NOEC**
Third week in March, June, September and December	April 30, July 31, October 31 and January 31	Ceriodaphnia dubia Pimephales promelas See Attachment A	≥ 100%	≥ 99%

After submitting four consecutive sets of Whole Effluent Toxicity ("WET") test results, all of which demonstrate compliance with the WET permit limits, the Permittee may request a reduction in the WET testing requirements. The Permittee is required to continue testing at the frequency specified in the Permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION**

WATER in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required **in Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

9. The 100% is defined as a sample that is composed of 100% effluent.

10. "C-NOEC" (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "99% or greater" limit is defined as a sample which is composed of 99% (or greater) effluent, the remainder being dilution water.

Part I.A. continued

3. a. The pH of the effluent shall neither be less than 6.5 nor greater than 8.3 standard units, and shall not be not more than 0.5 units outside of the background range, at any time.

   b. The discharge shall not cause objectionable discoloration of or odor or turbidity to the receiving waters.

   c. The effluent shall not contain a visible oil sheen or foam or floating solids at any time.

   d. The Facility shall maintain a minimum of eighty-five percent (85%) removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.

   e. When the effluent discharged for a period of ninety (90) consecutive days exceeds eighty percent (80%) of the design flow, the Permittee shall submit to EPA and DEP a projection of influent flows and loadings up to the time when the design capacity of the Facility will be reached, and a program for maintaining satisfactory treatment levels consistent with water quality standards.

   f. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

g. The results of sampling for any parameter above its required frequency must also be reported.

4. The Permittee must provide adequate notice to the Director of the following:

a. Any new introduction of pollutants into the Facility from an indirect discharger in a primary industry category discharging process water; and

b. Any substantial change in the volume or character of pollutants being introduced into the Facility by a source introducing pollutants into the Facility at the time of issuance of the Permit.

c. For purposes of this paragraph, adequate notice shall include information on:

(1) the quality and quantity of effluent introduced into the Facility; and

(2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the Facility.

5. Prohibitions Concerning Interference and Pass Through

a. Pollutants introduced into the Facility by a non-domestic source (user) shall not pass through the Facility or interfere with the operation or performance of the works**.**

6. Toxics Control

a. The Permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard that has been or may be promulgated. Upon promulgation of any such standard, this Permit may be revised or amended in accordance with such standards.

7. Numerical Effluent Limitations for Toxicants

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this Permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to reopen the permit and develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The Permittee is authorized to discharge only in accordance with the terms and conditions of this Permit and only from the outfall listed in Part I.A.1 of this Permit. Discharges of wastewater from any other point

sources, including sanitary sewer overflows (SSOs), are not authorized by this Permit and shall be reported in accordance with Section D.1.e.(1) of the General Requirements of this Permit (twenty-four (24) hour reporting).

C. OPERATION AND MAINTENANCE OF THE TREATMENT SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

   The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

   The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

   The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MA DEP **within six months of the effective date of this permit** (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

   The plan shall include:

   - An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.

   - An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.

   - Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.

   - An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP annually, **by the anniversary date of the effective date of this permit**. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I and, the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

In order to maintain compliance with the terms and conditions of this Permit, the Permittee shall continue to provide an alternative power source with which to sufficiently operate the Facility (as defined at 40 CFR § 122.2).

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

2. The Permittee shall comply with the more stringent of either the state or federal (40 CFR Part 503) requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to facilities that perform one or more of the following use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The 40 CFR Part 503 conditions do not apply to facilities that place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons - reed beds) or are

otherwise excluded under 40 CFR 503.6.

5. The Permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The Permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The Permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. The Permittee **shall submit an annual report containing the information specified in the guidance by February 19.** Reports shall be submitted to the address contained in the reporting section of the Permit. Sludge monitoring is not required by the Permittee when the Permittee is not responsible for the ultimate sludge disposal. The Permittee must be assured that any third-party contractor is in compliance with appropriate regulatory requirements. In such case, the Permittee is required only to **submit an annual report on February 19** containing the following information:

   - Name and address of contractor responsible for sludge disposal
   - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

E. COMPLIANCE SCHEDULE

In order to comply with the permit limits, the Permittee shall take the following actions with regard to Total Phosphorus:

1. Within twelve (12) months of the issuance date of the Permit, the Permittee shall submit to EPA and DEP a status report detailing progress towards achieving the 0.1 mg/l total phosphorus limit.

2. Within twenty-four (24) months of the issuance date of the Permit, the Permittee shall complete design and initiate construction of the Facility improvements required to achieve the 0.1 mg/l total phosphorus limit.

3. Within thirty-six (36) months of the issuance date of the Permit, the Permittee shall submit to EPA and DEP a status report relative to construction of the Facility improvements required to achieve the 0.1 mg/l total phosphorus limit.

4. Within forty-eight (48) months of the issuance date of the Permit, the Permittee shall comply with the 0.1 mg/l total phosphorus limit.

F. MONITORING AND REPORTING

Monitoring results obtained during each calendar month shall be summarized and reported on DMR Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

Massachusetts Department of Environmental Protection
Central Regional Office - Bureau of Resource Protection
627 Main Street
Worcester, Massachusetts 01608

Signed and dated DMR Forms and toxicity test reports required by this Permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

G. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by EPA and DEP under Federal and State law, respectively. As such, all the terms and conditions of this Permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of DEP pursuant to M.G.L. Chap. 21, § 43.

Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared invalid, illegal or otherwise issued in violation of State law, such Permit shall remain in full force and effect under Federal law as an NPDES Permit issued by EPA. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit shall remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.